

# Spectacled bear in Ecuador

Wilson Moreno(\*) & Felipe Vaca(+)

(\*) UDLA Quito-Ecuador. (+) CEU, Vienna-Austria

The spectacled bear (*Tremarctos ornatus*), also known as Andean bear, is the only living species of bear native to the Andes Mountains in northern and western South America. Spectacled bears in Ecuador live in approximately 50000 km<sup>2</sup> of paramo and cloud forest habitats. About one-third of this area is part of the National System of Protected Areas and the remaining 67% is located on unprotected, undeveloped areas that have suffered a substantial reduction of approximately 40% from its original distribution.[1]

Reported bear sighting locations are shown by blue dots on the map [2]. With a maximum entropy model (MAXENT) [3], we use altitude to predict additional spectacled bear habitats. Probability estimates are shown on the map.

The model assigns high probabilities to altitudes between 1700 and 2800 meters above sea level, consistent with spectacled bears' preference for cloud forests and foothills habitats. It also assigns high probabilities to altitudes of ca. 4000 m. This prediction is likely a model misfit, as sightings in the mountain snow line over 5000 are rare due to geographical and infrastructure barriers that hinder the thriving of spectacled bears.

[1] Spectacled bear, [https://en.wikipedia.org/w/index.php?title=Spectacled\\_bear&oldid=1181852162](https://en.wikipedia.org/w/index.php?title=Spectacled_bear&oldid=1181852162) (last visited Nov. 1, 2023).  
[2] Data source: *Tremarctos ornatus* (F.G.Cuvier, 1825) in GBIF Secretariat. GBIF Backbone Taxonomy. Checklist dataset <https://doi.org/10.15468/39omei> accessed via GBIF.org on 2023-11-02.  
[3] Steven J. Phillips, Miroslav Dudík, Robert E. Schapire. [Internet] Maxent software for modeling species niches and distributions (Version 3.4.1). Available from url: [http://biodiversityinformatics.amnh.org/open\\_source/maxent/](http://biodiversityinformatics.amnh.org/open_source/maxent/).  
[4] The compass was modified from [https://www.freepik.com/free-vector/compass-design\\_917013.htm#query=north%20arrow&position=0&from\\_view=keyword&track=ais](https://www.freepik.com/free-vector/compass-design_917013.htm#query=north%20arrow&position=0&from_view=keyword&track=ais)>Image by evasplace on Freepik

